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Reply Brief
FJones
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Applicant	:	Isik C. Kizilyalli, et al.
Application No.	:	09/516,004
Filed	:	February 29, 2000
Title	:	SELECTIVE LASER ANNEAL ON SEMICONDUCTOR MATERIAL
Grp./Div.	:	2811
Examiner	:	O. Nadav
Docket No.	:	45368/SAH/A717

APPELLANTS' REPLY BRIEF

Assistant Commissioner for Patents
Washington, D.C. 20231

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December 2, 2002

Commissioner:

This Reply Brief is filed pursuant to 37 C.F.R. §1.193, in response to the Examiner's Answer mailed on October 1, 2002. This Reply Brief is necessitated by the new issues included in the Examiner's Answer.

THE EXAMINER'S ANSWER IS NON-RESPONSIVE TO APPELLANTS' BRIEF AND INACCURATE

- The specification and Figures of the present application are clearly enabling for self-aligned source and drain regions as these features are well-known in the art as confirmed by the citations presented in the Appellants' Brief. There is nothing in the drawings to suggest any inconsistency with self-aligned features. Pages 7 and 8 of the Appellants' Brief filed on July 11, 2002, and pages

2-4 of Appellants' Response to Final Office action filed on March 28, 2002, clearly support that self-aligned source/drain regions are clearly enabled by the specification as read in conjunction with the Figures, and that the Examiner's position - that self-aligned source/drain regions later become *un*-self-aligned, is untenable and incorrect.

- The Examiner's assertion that self-aligned source and drain regions are inherent in Yu's structure, is inaccurate. More particularly, the Examiner's assertion that "Yu forms gate electrode 18, and then forms source and drain regions 22, 24 (col. 6, lines 3-10)", is inaccurate. An examination of col. 5, lines 50-64 reveals that Yu clearly *teaches away* from the sequence alleged by the Examiner, and **requires** that the gate structure is formed **after** source/drain regions 22 and 24 are formed and activated. The two paragraphs cited by the Examiner (paragraph at col. 6, lines 3-6 and following paragraph) do not disclose or suggest the process sequence alleged by the Examiner. Rather, these paragraphs merely explain how the various illustrated features may be formed, without providing any order or process sequence. As such, Yu cannot and does not teach or suggest self-aligned source and drain regions.

- The Examiner's position with respect to the product-by-process characterization of the claim elements, is inaccurate. The Examiner provides no evidence to support that the features of "self-aligned source region" and "self-aligned drain region" are product-by-process limitations. Self-aligned source and drain regions are well known in the art to be structural features and these features distinguish the invention over the art. Applicants previously provided multiple citations of valid U.S. patents with claims that recite self-aligned source/drain regions as structural features. Independent claims 6 and 9 of the subject application each recite a self-aligned source region and a self-aligned gate region. Such a claimed feature is quite distinguished from "a source region formed by [a process] . . . ", for example. Since the claimed features are NOT product-by-product limitations, the Examiner's analysis of the significance of a "product-by-process" limitation is therefore irrelevant. Self-aligned source and drain regions are structural features that distinguish applicants' invention.

- Applicants point out that the present invention is distinguished from the prior art by the combination of structural features of:
  1) self-aligned source and drain regions,
  2) the high-K amorphous dielectric layer having a dielectric constant greater than 5, and
  3) an operable FET.

These elements are as recited in each of independent claims 6 and 9. The prior art does not teach or suggest this combination. In the prior art, these features are mutually exclusive. Yu, in fact, teaches away from such combination, as noted above. With respect to the statement in the Examiner's Answer that a "gate leakage current being less than one milliamp per cm (-2) . . are inherent in Yu's device" (page 8, line 2), applicants point out that if the prior art does not teach or suggest that the combination of the features is achievable, then the prior art cannot possibly teach the end result, i.e. the claimed low leakage current that is enabled by such combination. The Examiner's position is not supported by logic. Furthermore, the Examiner provides no reference disclosing a structure with the features of a gate leakage current less than 1 amp/cm^2.

- In summary, Applicants respectfully submit that:
  A) The specification and figures clearly enable self-aligned source/drain regions;
  B) A "self-aligned source/drain region" is a structural feature; and
  C) All of the prior art rejections should be overturned as they are based on misinterpretations and/or piecemeal reconstruction of the prior art.

Respectfully submitted,
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